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PATENT APPLICATION
PO-8687US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION OF	
SCOTT A. BROWN	GROUP NO.: 1711
SERIAL NUMBER: 10/801,164	EXAMINER: JOHN M. COONEY
FILED: MARCH 5, 2004	
TITLE: JOINT FILL COMPOSITION	

LETTER

Mail Stop - Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 2231-1450

Sir:

Enclosed herewith is a Revised Appeal Brief in the matter of the subject Appeal. If any charge is associated with this paper, please charge our Deposit Account Number 13-3848.

Respectfully submitted

By _____
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Attorney for Appellant
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Date
Lyndanne M. Whalen, Reg. No. 29,457
Name of applicant, assignee or Registered Representative
_____
Signature
November 27, 2006
Date

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REVISED APPEAL BRIEF

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Brief is being submitted in response to the Office Communication of October 27, 2006 and the Final Action of the Examiner dated March 8, 2006 in which the rejections of Claims 1-11, 13-29, 31 and 32 were maintained.

I. REAL PARTY IN INTEREST

The inventor assigned his interest in this application to Polythane Systems, Inc. which has been acquired by Baysystems North America LLC. Baysystems North America LLC is therefore the real party in interest in this Appeal.

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Lyndanne M. Whalen, Reg. No. 29,457
Name of applicant, assignee or Registered Representative

Signature

November 27, 2006
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II. RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings which are related to, affected by or have a bearing on the Board's Decision in this Appeal.

Appellant has filed a Terminal Disclaimer over U.S. Patent 6,521,673 and Application Serial Number 10/326,338 in this case.

III. STATUS OF CLAIMS

Claims 1-11, 13-29, 31 and 32 remain pending and are the subject of this Appeal.

Claims 12 and 30 were cancelled in Appellant's Amendment filed February 14, 2005.

IV. STATUS OF AMENDMENTS

No amendments to the claims have been made or requested subsequent to the Final Action of the Examiner.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention as claimed in independent Claim 1 relates to a method for filling a gap at the junction between two lengths of coated pipe. (page 1, paragraph [0002] of the specification) In the claimed method, the gap is enclosed with a mold having an opening (page 4, lines 1-2 of paragraph [0012] of the specification), the joint filling composition is introduced into the mold (page 4, line 2 of paragraph [0012] of the specification), and the joint filling composition is allowed to react and form a foam (page 4, lines 2-3 of paragraph [0012] of the specification). The joint filling composition is made up of an A-side component and a B-side component. The A-side component includes from about 75 to about 85 weight %, based on total weight of the A-side component, of polymeric MDI and between about 15 and about 25 weight %, based on total weight of A-side component of 2,2,4-trimethyl-1,2-pentanediol diisobutyrate. (page 7, lines 1-3 of paragraph [0026] of the specification) The B-side component includes from about 35 to about 45 weight %, based on total weight of B-side component, of amine based polyether polyol and

about 50 to about 65 weight %, based on total weight of B-side component, of 2,2,4-trimethyl-1,2-pentanediol diisobutyrate. (page 7, lines 3-5 of paragraph [0026] of the specification)

The present invention as claimed in independent Claim 13 is directed to a method for filling a gap at the junction between two lengths of coated pipe. (page 1, paragraph [0002] of the specification) In the claimed method, the gap is enclosed with a mold having an opening (page 4, lines 1-2 of paragraph [0012] of the specification), a composition comprising polyol (page 5, line 1 of paragraph [0015]), isocyanate (page 5, lines 1-2 of paragraph [0015]), and an ester diluent (page 5, line 2 of paragraph [0015]) is introduced into the mold (page 4, line 2 of paragraph [0012] of the specification), and this composition is allowed to react and form a polymer (page 4, lines 2-3 of paragraph [0012] of the specification).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-11, 13-29, 31 and 32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hagquist (U.S. 6,288,133) in view of McBrien et al (U.S. 5,328,648) and Isobe et al (U.S. 6,433,033).

VII. ARGUMENTS

A. The teachings of Hagquist, McBrien et al and Isobe et al can not be combined in any manner to "arrive at" Appellant's invention as claimed in Claims 1-11.

Hagquist discloses a foamable composition made up of at least two parts. The first part includes at least one polyol, at least one gelling agent and at least one blowing agent. The second part includes at least one isocyanate. Hagquist does not teach or suggest a method for filling a gap at the junction between two lengths of coated pipe.

The Hagquist compositions are distinguishable from the compositions employed in the method claimed in the present application in several respects. Specifically, Hagquist does not teach or suggest: (1) the amounts of TXIB required in Appellant's claimed invention; (2) Hagquist does not teach or suggest that the disclosed compositions or any particular modification thereof would withstand the stresses encountered in curing a polyurethane to fill the gap between two concrete-

coated pipes and (3) Hagquist requires castor oil-derived polyols and not an amine-based polyether polyol of the type required in Appellant's claimed invention.

With respect to the first distinction, Hagquist teaches that a plasticizer is preferably used in the disclosed compositions. If used, such plasticizer may be used in an amount of from about 1 to about 25 wt.% in the isocyanate component and/or the isocyanate-reactive component. TXIB is taught to be the preferred plasticizer.

Appellant's claimed invention, however, requires compositions with significantly larger amounts of TXIB than even the upper limit suggested by Hagquist. Specifically, Appellant's invention requires compositions which include from 50 to 65 wt.% TXIB in the B-side component plus from 15 to 25 wt.% TXIB in the A-side component.

Further, one skilled in the art would not be motivated to use more than 25 wt.% TXIB in the B-side component **plus** 15-25 wt.% TXIB in the A-side component because Hagquist shows that use of amounts as low as from 5.25 to 20 parts of TXIB produce foams having the desired properties.

With respect to the second difference between Appellant's invention and the teachings of Hagquist, there is no teaching in Hagquist with respect to the ability of the disclosed compositions to withstand stresses such as those to which a gap-filling composition is subjected. One skilled in the art seeking to develop an improved gap-filling composition would not therefore be taught how to achieve his desired goal by Hagquist.

With respect to the third distinction between Appellant's invention and Hagquist, the reference itself teaches that use of a castor oil based polyol is critical to the disclosed compositions and that other known polyols may optionally be included. One skilled in the art reading Hagquist would therefore need to ignore the reference teaching with respect to its critical polyol and select amine based polyether polyols from the many known polyols taught to be suitable in order to "arrive at" the polyol required in Appellant's invention.

McBrien et al clearly teaches at column 5, line 66 through column 6, line 7 that all plasticizers are not equivalent in composite joint infill systems.

One skilled in the art reading the McBrien et al reference could not therefore expect with any reasonable degree of certainty that use of TXIB would result in a composition with a reduced tendency to crack during cure. Nor would the McBrien et al reference suggest to that skilled artisan that use of TXIB in significantly larger amounts than those taught by Hagquist would be beneficial in the joint filling method disclosed by McBrien.

Isobe et al is relied upon for its teaching of amine-initiated polyether polyols. Isobe et al does not, however, teach or suggest anything with respect to TXIB.

The teachings of Isobe et al do not therefore "add" anything to the teachings of Hagquist and McBrien et al which would lead one skilled in the art to use the large amounts of TXIB required in Appellant's claimed invention.

In short, not one of the cited references teaches or suggests use of the large amounts of TXIB required in the compositions that must be employed in Appellant's claimed method **for any reason**. The combined teachings of Hagquist, McBrien and Isobe et al do not therefore render Appellant's claimed invention obvious.

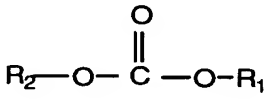
B. The teachings of Hagquist, McBrien et al and Isobe et al can not be combined in any manner to "arrive at" Appellant's invention as claimed in Claims 13-29, 31 and 32.

Hagquist does not teach or suggest a method for filling a gap at the junction between two lengths of coated pipe nor does Hagquist teach or suggest that the disclosed compositions or any particular modification thereof would withstand the stresses encountered in curing a polyurethane to fill the gap between two concrete-coated pipes

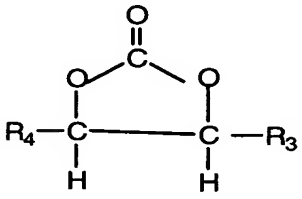
One skilled in the art seeking to develop an improved gap-filling composition would not therefore be taught how to achieve his desired goal by Hagquist.

McBrien et al teaches a method for infilling the space at a welded joint in a concrete coated pipeline in which unreacted liquid components are injected into that mold. McBrien et al does teach that polyurethanes are preferred materials **but** McBrien et al also teaches that the polyurethane-forming system should include a liquid modifier which is preferably a heavy aromatic petroleum distillate made up primarily of C_9-C_{11} aromatic hydrocarbons having a flash point of from 200 to 230°F.

McBrien et al also teaches that the liquid organic carbonates disclosed in U.S. 4,154,716 may be used as liquid modifiers. However, the carbonates disclosed in U.S. 4,154,716 are represented by the formulae



and



McBrien et al does not therefore teach or suggest the ester diluents required by the present invention. Further, McBrien et al teaches at column 5, line 66 through column 6, line 7 that all plasticizers are not equivalent in composite joint infill systems. It can not therefore be properly assumed that any plasticizer could be used in a process such as that disclosed by McBrien et al.

One skilled in the art reading the McBrien et al reference could not therefore expect with any reasonable degree of certainty that use of an ester diluent would result in a composition with a reduced tendency to crack during cure. Nor would the McBrien et al reference suggest to that skilled artisan that use of an ester diluent in any polyurethane-forming system would result in a suitable joint filling composition.

Isobe et al is relied upon for its teaching of amine-initiated polyether polyols. Isobe et al does not, however, teach or suggest anything with respect to joint filling compositions or the use of ester diluents in joint filling compositions.

The teachings of Isobe et al do not therefore "add" anything to the teachings of Hagquist and McBrien et al which would lead one skilled in the art to Appellants' claimed method for filling a gap at the junction with a polyurethane-forming composition in which an ester diluent is included.

In short, the McBrien et al reference (the **only** reference which teaches a method of the type being claimed by Appellant) teaches that specified plasticizers produce results which are **not** achieved with other plasticizers. One skilled in the art reading the cited references without the benefit of Appellant's specification could not therefore possibly expect to develop a joint filling composition having properties at least as good as those disclosed in McBrien et al by using a different material used in systems for completely different types of applications (e.g., Hagquist's repair of surface defects or Isobe et al's cushioning materials).

The teachings of Hagquist, McBrien and Isobe et al can not therefore be properly combined in a manner which would render Appellant's claimed invention obvious.

C. One skilled in the art would not be motivated by the teachings of any of the cited references to combine those references in the manner suggested by the Examiner.

Appellant is claiming a **method** for filling a gap at the junction between two lengths of coated pipe.

Only one of the cited references, i.e., McBrien et al is directed to a method for filling in this same type of gap. McBrien et al teaches:

> The joint infill material of this invention is preferably made of a fast setting elastomeric polymer which will set up in a few minutes so that the pipe can be handled without fear of damage to the joint infill. Preferred polymers include the rapid setting solid polyurethanes... (at column 5, lines 3-7 of U.S. 5,328,648)

McBrien et al does not teach or suggest that an ester-containing polyurethane/urea composition would be suitable for use in the disclosed method for filling the gap between two coated pipes.

Hagquist does not teach or suggest anything with respect to a method for filling the gap between two coated pipes. Hagquist is directed to foams useful for the repair of holes in structural materials such as railroad ties.

Isobe et al does not teach anything with respect to joint infilling compositions or processes. Isobe et al is directed to the production of foams for use in furniture.

No correlation between the problems solved by Isobe et al's furniture foam and those solved by Hagquist (foam for filling holes in railroad ties) and by McBrien

et al (molded foam for joint filling) has been established. One skilled in the art seeking to develop an improved joint infilling composition and process would not therefore consider it obvious to combine the teachings of Hagquist or Isobe et al with the teachings of McBrien.

Why then would one skilled in the art seeking to fill a gap between two lengths of coated pipe "select" a composition based upon the combined teachings of Hagquist and Isobe et al from the thousands of possible fast setting polymers known and available in the art?

Appellant maintains that there is no teaching in either Hagquist or Isobe et al which would lead one skilled in the art to select any composition based upon its/their teachings from the thousands of other possible compositions.

It is well established that obviousness can not be established by locating references which describe various aspects of an innovation **unless** the Patent Office also provides evidence of a motivating force which would lead one skilled in the art to do what Appellant has done. Ex parte Levengood, 28 USPQ2d 1300 (Bd. App. 1993)

In the present case, the Hagquist and Isobe et al references do not provide such evidence. The Hagquist compositions are taught to be useful for filling spike holes in railroad ties, reinforcing composite structural building materials, well repair and concrete repair. Isobe et al's compositions are taught to be useful for interior trims of vehicles, cushioning materials for furniture, bedding and miscellaneous goods. None of the applications for the compositions disclosed in the Hagquist or Isobe et al references requires the rapid set **and** strength requirements for a joint infill composition. One skilled in the art trying to select a suitable fast setting polyurethane for use in filling the gap between two coated pipes would not therefore be led by the teachings of Hagquist and Isobe et al to select any of the compositions disclosed therein or a modified version of any of the compositions disclosed therein.

Further, no other evidence of a motivating force for selecting a polyurethane composition satisfying the compositional requirements of Appellant's claims from the thousands of possible quick setting polyurethanes has been provided by the Examiner.

The Examiner has argued that Hagquist's teachings with respect to flow enhancement of reactants supports the rejection of Appellant's claims.

Appellant would point out, however, that no relationship between flow enhancement, cure rate, material strength and low potential for environmental contamination is taught or suggested by Hagquist or by any other cited authority. It can not properly be assumed that a material which promotes flow enhancement will also be suitable for inclusion in compositions for filling a gap at the junction between two lengths of coated pipe.

The mere fact that Hagquist teaches use of a material such as TXIB as a flow enhancer can not therefore be properly construed as a teaching that TXIB or **any other ester diluent** will be suitable for use as a joint filling composition in Appellant's claimed method.

The Examiner has cited In re Aller, 105 USPQ 233 (CCPA 1955), In re Reese, 129 USPQ 402 (CCPA 1961) and In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) to support this rejection.

Appellant maintains that these cited cases are distinguishable from the present case.

More specifically, in each of the above-listed cases, the claimed invention was the result of optimization of the prior art - **not** selection of a material from unrelated prior art.

In In re Aller, *supra*, the invention claimed was identical with that of the prior art with the exception that lower temperatures and higher acid concentrations were being claimed. The materials used in the cited prior art process and the process being claimed were the same.

In contrast, McBrien et al (the only cited reference directed to a process of the type being claimed by Appellant) does not disclose the same materials required in Appellant's joint fill composition.

In In re Reese, *supra*, the invention being claimed was a composition in which the components were the same as those present in the cited prior art composition. The only difference between the two compositions was the proportion in which those same components were employed.

In contrast, in the present case, the only reference directed to the same type of process as that which is being claimed by Appellant, i.e., McBrien et al, does not disclose any composition employing the same materials required in the composition used in Appellant's joint filling process.

In In re Boesch, *supra*, the alloys being claimed included the same elements as the alloys taught by the cited prior art. The only difference between the prior art alloys and those being claimed was the relative amount of the elements.

However, in the present case, McBrien et al (the only reference directed to the same type of process as that which is being claimed by Appellant) does not disclose any composition employing the same materials required for the composition in Appellant's joint filling process.

The cited cases do not therefore support the rejection of Appellant's claims.

VIII. CONCLUSION

Not one of the cited references teaches or suggests a joint filling method using a composition containing an ester diluent (required by all of Appellants' claims), much less the large amounts of TXIB required by some of Appellant's claims (i.e., Claims 1-11). The teachings of Hagquist, McBrien et al and Isobe et al can not therefore be combined in any manner which would render Appellant's claimed invention obvious.

Appellant is claiming a method for filling gaps between pipes. Only one of the cited references, McBrien et al, teaches such a method. That reference also teaches that not all of the known plasticizers will be suitable for use in filling gaps between pipes. Selection of esters (particularly, the TXIB required in Appellants' Claims 1-11) from the many known plasticizers on the basis of isolated teachings of references directed to completely different problems (i.e., Hagquist and Isobe et al) would not therefore have been obvious to one of ordinary skill in the art at the time Appellant made his invention.

Appellant therefore maintains that the Examiner's rejection is in error and respectfully requests that this rejection be reversed and that Claims 1-11, 13-29, 31 and 32 be allowed.

Respectfully submitted,

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IX. CLAIMS APPENDIX

1. A method for filling a gap at the junction between two lengths of coated pipe, the method comprising:

enclosing the gap with a mold having an opening;

introducing a joint filling composition into the mold; and

allowing the joint fill composition to react and form a foam;

wherein the joint filling composition comprises:

an A-side component comprising between about 75 weight % to about 85 weight %, based on total weight of the A-side component, of polymeric MDI and between about 15 weight % and about 25 weight %, based on total weight of the A-side component, 2,2,4,-trimethyl-1,2-pentanediol diisobutyrate; and

a B-side component comprising between about 35 weight % and about 45 weight %, based on total weight of the B-side component, of amine based polyether polyol, and about 50 weight % to about 65 weight %, based on total weight of the B-side component, 2,2,4-trimethyl-1,2-pentanediol diisobutyrate.

2. The method of claim 1, wherein an amine catalyst is included in the joint filling composition.

3. The method of claim 1, wherein the composition further comprises water.

4. The method of claim 1, wherein the composition further comprises hydrofluorocarbon blowing agent.

5. The method of claim 1, wherein the composition further comprises a silicone based surfactant.

6. The method of claim 1, further comprising the step of removing the mold after formation of the foam.

7. The method of claim 1, wherein the foam comprises a polyurethane foam having an open cell content of about eighty percent or higher.

8. The method of claim 1, wherein the foam comprises a polyurethane foam having an open cell content of about ninety percent or higher.

9. The method of claim 1, wherein the foam comprises a polyurethane foam having a density of between about 2 and about 12 pounds per cubic foot.

10. The method of claim 1, further comprising the step of adding filler material to the mold, after the enclosing step and before the step of introducing the reaction mixture.

11. The method of claim 1, further comprising the step of adding a permeable membrane into the mold before the step of introducing the reaction mixture.

12. (cancelled)

13. A method for filling a gap at the junction between two lengths of coated pipe, the method comprising:

enclosing the gap with a mold having an opening;

introducing a composition comprising polyol, isocyanate, and an ester diluent into the mold; and

allowing the composition to react and form a polymer.

14. The method of claim 13, wherein the polyol comprises an amine based polyether polyol.

15. The method of claim 13, wherein the isocyanate comprises polymeric MDI.

16. The method of claim 13, wherein the ester comprises a diester.

17. The method of claim 13, wherein the ester comprises 2,2,4-trimethyl-1,2-pentanediol diisobutyrate.

18. The method of claim 13, wherein the composition further comprises water.

19. The method of claim 13, wherein the composition further comprises hydrofluorocarbon blowing agent.

20. The method of claim 13, wherein the composition further comprises a hydrocarbon blowing agent.

21. The method of claim 13, wherein the composition further comprises a silicone based surfactant.

22. The method of claim 13, further comprising the step of removing the mold after formation of the polymer.

23. The method of claim 13, wherein the polymer comprises a polyurethane foam having an open cell content of about eighty percent or higher.

24. The method of claim 13, wherein the polymer comprises a polyurethane foam having an open cell content of about ninety percent or higher.

25. The method of claim 13, wherein the polymer comprises a polyurethane foam having a density of between about 2 and about 12 pounds per cubic foot.

26. The method of claim 13, wherein the polymer comprises an elastomeric polymer.

27. The method of claim 13, wherein the isocyanate comprises an isocyanate prepolymer.

28. The method of claim 13, further comprising the step of adding filler material to the mold, after the enclosing step and before the step of introducing the reaction composition.

29. The method of claim 13, further comprising the step of adding a permeable membrane into the mold before the step of introducing the reaction composition.

30. (cancelled)

31. The method of claim 13, wherein the composition comprises between about 10 weight % and about 40 weight % ester diluent.

32. The method of claim 31, wherein the ester diluent comprises 2,2,4-trimethyl-1,2-pentanediol diisobutyrate.

X. EVIDENCE APPENDIX

None

XI. RELATED PROCEEDINGS APPENDIX

None